

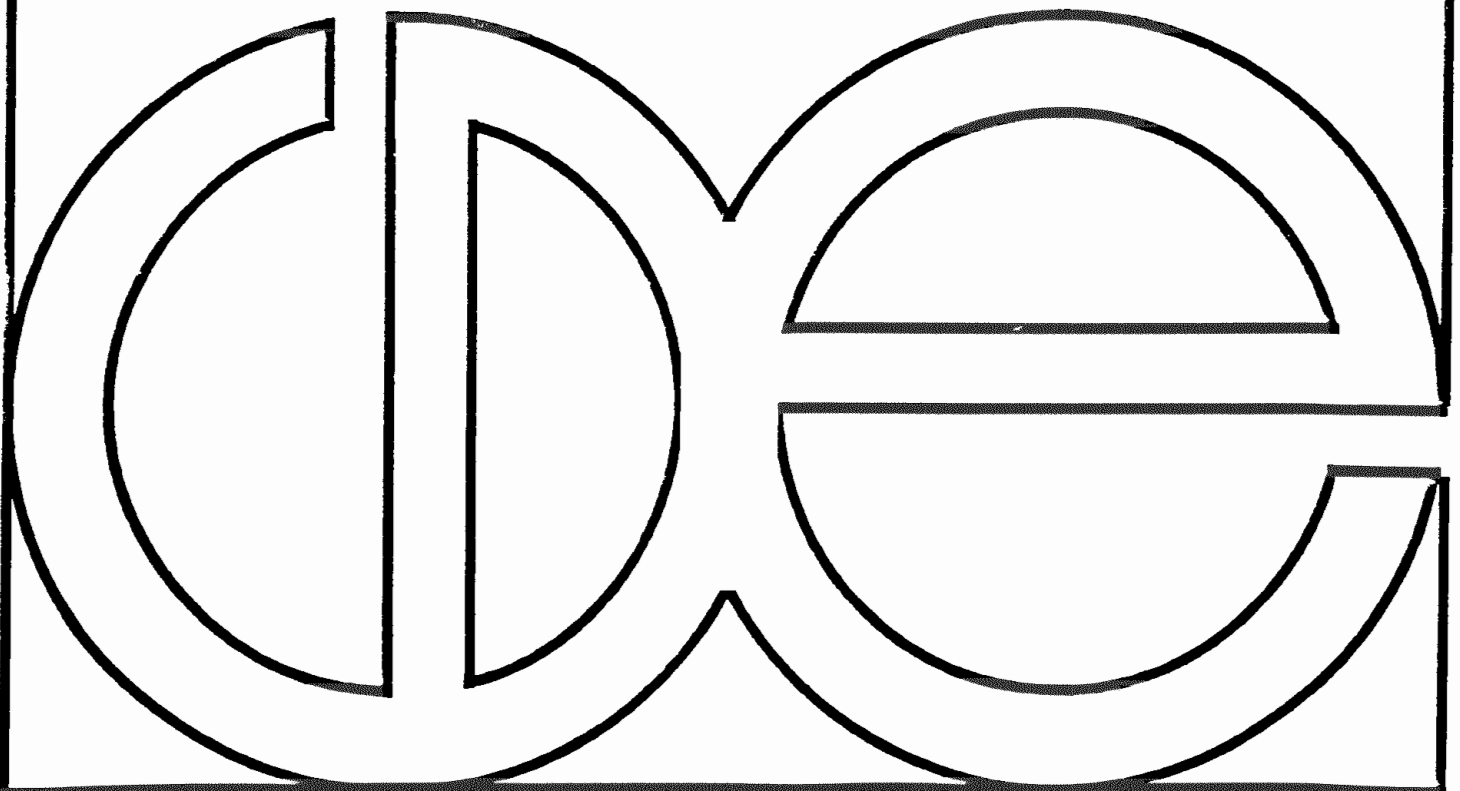
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**BLACK AND WHITE RESIDENTIAL SEGREGATION BY SOCIAL CLASS
IN FOUR U.S. METROPOLITAN AREAS, 1960-1980**

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Abstract

This thesis examines, for the 1960-1980 period, trends in residential segregation by education among blacks and whites in four U.S. metropolitan areas. In analyzing these trends, we seek to address the following questions: 1) What is the extent of interclass segregation within the black and white populations?; and 2) To what extent did interclass segregation change between 1960 and 1980? Using 1960 and 1980 U.S. Census data, we decompose education specific residential segregation indices for each metropolitan area and each race group into two additive components: 1) a segregation component, which can be attributed to differences in central/suburban residence; and 2) a segregation component which can be attributed to differences in neighborhood residence. We find that residential segregation is greatest for individuals with dissimilar years of schooling completed. Among whites, residential segregation by location declined substantially between 1960 and 1980, while it increased substantially among blacks during the same period. Thus, middle and upper class blacks are more likely to be segregated from less educated blacks in 1980 than in 1960, a finding which is consistent with Wilson's (1987) thesis of increased racial isolation as a major cause of the growth of the black underclass.

Introduction

In **The Truly Disadvantaged**, William J. Wilson (1987) argues that the residential distance between lower- and middle-class blacks increased during the 1970s as a result of liberal housing legislation and suburbanization of manufacturing jobs, which occurred following the transformation of the American economy. As the Open Housing Act of 1968 required fair treatment in the housing market, Wilson claims that middle-class blacks were increasingly able to move to the suburbs, which isolated them from poor blacks in the inner city. This social isolation hypothesis, however, is qualified by Massey and Eggers (1990) and Farley (1991). They find that although black interclass segregation exhibited little change in the 1970s, it remained less extensive than among whites and other minority groups.

Findings on both sides of this debate, therefore, stimulate this research. The primary objective of this paper is an analysis of the extent of interclass segregation among blacks, and the degree to which it changed between 1960 and 1980. For this purpose, I use data from the 1960 and 1980 decennial censuses on the spatial distribution of the black population by education in the following cities: Atlanta, Chicago, Houston, and Philadelphia. My aim is to determine the extent to which middle-class blacks are isolated from lower-class blacks within the four cities; and whether the level of residential segregation between social classes increases as Wilson (1987) maintains, or exhibits little or no change as Massey and Eggers (1990) and Farley (1991) claim, between 1960 and 1980.

The issue of interclass segregation deserves further analysis because of the widespread debate among social scientists concerning its extent and effect on the rising concentration of poverty and intergenerational transmission of poverty. Consequently, I hope to reconcile differences in findings of previous studies on these issues. The discussion is organized as

follows. First, I present contributing factors to interclass segregation; second, I review the literature on interclass segregation, focusing specifically on white ethnic groups; third, I survey the historical origins of interclass segregation among blacks; fourth, I present and discuss results from an analysis of residential segregation by social class in four U.S. metropolitan areas for 1960 and 1980.

Contributing Factors to Interclass Segregation

For purposes of this analysis, residential segregation by social class is defined as the condition where particular racial and ethnic groups are residentially separated along class lines. Several factors influence levels of interclass segregation among households. Differences in lifestyle may influence a household's choice in where to live (Wilson, 1979). For example, households with high socioeconomic status (SES) may elect to live in neighborhoods with people of similar prestige and status, where social contacts are established and certain values and norms are reinforced. Also, high-status families with certain lifestyles may prefer to live in neighborhoods with higher quality and more spacious housing, better schools, more recreational facilities and nonresidential amenities, and safer environments than can be found in inner city areas where members of the group initially settled (Massey and Mullan, 1984; Wilson, 1979). The final residential configuration means that higher classes live in better neighborhoods, while lower classes (who cannot afford housing packages and nonresidential amenities found in neighborhoods highly concentrated with high-status families) live in areas plagued by harsh social and economic conditions.

Discrimination in the housing market may also contribute to varying levels of interclass segregation among different racial and ethnic groups. For instance, middle-class black households may be steered to neighborhoods closer to poor blacks than, say, middle-class Hispanic households to poor Hispanic areas (Massey and Denton, 1985). As a consequence, the extent of

black class segregation is smaller than that among Hispanics because blacks face more structural barriers in their attempt to move away from poor blacks, and thus to spatially assimilate into majority neighborhoods. In short, racial discrimination contributes to varying levels of class segregation among groups.

Background

Before determining whether black interclass segregation corresponds to that among whites, I provide a brief theoretical framework of historical and contemporary research on white class segregation. With the advent of industrialization in the 1870s, the availability of housing, and improvements in transportation, certain old European immigrants of the 1820 through 1860 period gained better occupations and higher incomes, and translated these achievements into spatial mobility into developing suburbs (Lieberson, 1980; Hershberg et al., 1979). The movement of these new middle- and upper-class immigrants away from their original areas of settlement became the conventional pattern of residential segregation by social and economic class.

Like old European immigrants, new European immigrants of the early twentieth century were also initially confronted with impoverished conditions, but eventually a segment of this group experienced economic gains that allowed them to segregate themselves along class lines (Lieberson, 1980). Ethnically homogeneous groups broke up into new divisions based on social class (Zunz, 1982:3). As their occupations and incomes came to resemble those of the native white middle-class, they were able to move out of central areas of major cities. Clearly, those immigrants who were able to do so distanced themselves from lower class members of their group, and thereby spatially assimilated themselves into the larger society (Hershberg et al., 1979).

More recent studies suggest that middle-class whites still have the ability to extensively segregate themselves from lower-class whites (Erbe, 1975; Farley, 1991; Massey and Eggers,

1990). However, how consistent are historical and contemporary patterns of black interclass segregation with those of whites? This question is addressed in the following section.

Because of racial discrimination in the housing market and the threat of violence from whites, blacks, following the great migration, were isolated from white neighborhoods into contiguous black neighborhoods that later resulted in ghettos (Kusmer, 1978; Farley and Frey, 1994). This means that new middle-class blacks, who developed as a result of economic changes of World War I, could not easily translate their socioeconomic achievement into residential integration into white neighborhoods (Massey and Denton, 1993). For example, middle-class blacks who attempted to move into white neighborhoods confronted restrictive covenants when white property owners agreed not to sell to black families (Osofsky, 1963; Drake and Cayton, 1945). They also faced intimidation and violence by whites if they moved into white neighborhoods. This contributed to the restrictions in black class segregation.

These discriminatory practices continued after World War II, when construction of new housing in growing suburbs and court battles concerning the legality of restrictive covenants could have enabled blacks the opportunity to move out of inner cities (Farley and Frey, 1994). Despite these meager gains, blacks of all classes were still confined to segregated neighborhoods plagued with poor housing and public facilities. Instead of undergoing extensive residential mobility, Frazier (1957) claims, middle-class blacks, unlike middle-class whites, were confined to their homes where they socialized with blacks of equal status (Landry, 1987:59). This enabled them to validate their "status," and to socially separate themselves from lower-class blacks, while being residentially isolated from white society. Apparently, black interclass segregation was unique from that among whites, mainly because of their racial status.

The implementation of the Open Housing Law of 1968, the Housing and Urban Development Act of 1968, and government ordinances in housing, however, meant that middle-

class blacks no longer had to center their social lives around the home. Instead, they could legally consume the same kinds and quality of goods and services as middle-class whites (Landry, 1987:84). Blacks now lived in an environment which mandated equal treatment rather than discrimination in public life. The above civil rights legislation, coupled with improvements in black incomes, spurred black residential mobility. Wilson (1987) claims this residential mobility for middle-class blacks substantially increased during the 1960s and 1970s to a considerable extent, resulting in increased black interclass segregation. Along with his social isolation thesis, Wilson maintains this exodus of nonpoor blacks removed a "social buffer" from inner cities that would otherwise deflect high poverty rates which the new "underclass" faced. Although Wilson's poverty thesis is important and worth further study, I am interested in testing his social isolation thesis at this point.

While Wilson (1987) claims that black interclass segregation was great following civil rights legislation in housing, other scholars question the degree to which nonpoor blacks are able to separate themselves from poor blacks. Erbe (1975) concludes that even if middle-class blacks achieved high socioeconomic status, they would be more likely to live in neighborhoods with many impoverished blacks, thus losing one of the benefits of status that accrues to prosperous whites. At the same time, Massey and Eggers (1990) conclude that the degree of black residential segregation by social class was not as extensive during the 1970s as that among whites, Hispanics, and Asians. Finally, whereas Wilson argues that black interclass segregation substantially increased, Farley (1991) maintains that it neither increased nor decreased very much during the 1970s.

In the final analysis, we see that middle-class blacks are no different from other middle class groups in that they attempt to place residential distance between themselves and lower-class blacks by moving into middle-class white suburbs. However, as we see from the above review,

blacks are less successful than other groups because of their racial status, thereby confirming the idea that black class segregation does not correspond to that among whites.

Current Analysis

This analysis presents a test of Wilson's (1987) social isolation thesis by measuring the extent and change in black interclass segregation between 1960 and 1980. This test allows us to qualify the findings of not only Wilson, but those of Massey and Eggers (1990) and Farley (1991) as well. I analyze interclass segregation among whites as a reference to gauge the extent and change among blacks. If changes in residential segregation by social class among blacks and whites are of similar magnitude and in the same direction, then claims of the uniqueness of change among blacks since the 1960s would be less plausible.

By using segregation in 1960 as a baseline, I am able to evaluate the magnitude and immediate change in class segregation associated with the civil rights revolution and the passage of antidiscrimination laws in housing during the 1960-1980 period. For this reason, the analysis below provides a more complete temporal study than that of Wilson, Massey and Farley, who limit their studies to the 1970 decade. The hypothesis guiding this study is that as levels of educational attainment increase, residential distance between extreme education subgroups increases as well.

Data and Methods

Data from the census tract series of the 1960 and 1980 Census of Population and Housing (U.S. Bureau of the Census 1963, 1983) are utilized to examine interclass segregation among blacks and whites. The unit of analysis is a census tract, which is a defined geographic unit with approximately 4,000 people. The Census Bureau publishes social, economic, and demographic characteristics of populations in census tracts. Because a census tract is more racially, socially,

and economically heterogeneous than a city block, it does not necessarily reflect the true composition of neighborhoods (White, 1987). Hence, its use as a unit in the measurement of residential segregation can distort the extent to which groups are clustered in the same residential areas. Tracts are, however, the smallest geographical units for which social, economic, and demographic characteristics are tabulated by race, and reliable statistical estimates can be generated (White, 1987). The Atlanta, Chicago, Houston, and Philadelphia metropolitan areas are analyzed because each had large black populations in 1980 of over 400,000 blacks (Luckey, 1989), and each are located in different geographical regions.

Procedures for establishing comparability for SMSA boundaries for 1960 and 1980 were developed. The 1980 census tracts were merged or matched with 1970 census tracts, and 1970 census tracts were merged with 1960 census tracts. I used this procedure to establish tract comparability from 1960 to 1980. Because certain counties were not a part of particular SMSAs in 1960, but were in 1980, they were added to the 1960 distribution to achieve county consistency.

Included in this analysis are census tracts that were suppressed in 1960 and 1980 because of small representations of blacks and whites by years of schooling completed. Tracts are suppressed or omitted from black and white sections to reduce the chance that researchers can identify specific individuals. I adopt Fielding and Taeuber's (1990) decision rule for including suppressed census tracts in the analysis (see Appendix). Suppressed tracts are more likely to have a disproportionate number of highly educated blacks and whites, but of insufficient size to meet the requirements for separately reporting information for these individuals. Therefore, I constructed nonbiased segregation measures by including highly educated blacks living in predominantly white tracts and less educated whites living in predominantly black tracts (Fielding and Taeuber, 1990). Less educated blacks and whites were more suppressed in 1960 than highly

educated blacks and whites, while in 1980 highly educated blacks and all white education classes were more suppressed. Overall, including both suppressed and nonsuppressed census tracts reduces the bias otherwise associated with levels of class segregation.¹

The Census Bureau in 1980 reported education distributions by tracts separately for blacks and whites in each SMSA. However, in 1960 it only reported education distributions separately for the total population and nonwhites. Since blacks (Negroes) represented over 97 percent of the nonwhite populations of each SMSA, I consider nonwhites to mean blacks in 1960. For whites, an education distribution was derived by subtracting the nonwhite distribution from the one reported for the total population by tracts. The 1960 education categories are adjusted to approximate 1980 categories. Those categories include elementary – 0 to 4 years, 5 to 7 years, and 8 years; high school – 1 to 3 years, 4 years; college – 1 to 3 years, and 4 years or more.

Class segregation measures within the black and white populations are computed comparing the residential concentration of each education subgroup with every other subgroup. In order to determine the extent to which intrametropolitan (city-suburb) segregation or segregation at the neighborhood level (census tracts), contributes to class segregation, I decomposed the total amount of segregation for the four metropolitan areas into two components: (a) intrametropolitan segregation, indicating differences in the representation of two education groups in central cities and suburbs, and (b) residential segregation indicating differences in the representation of two education groups at the neighborhood level, as captured by census tracts, within both central cities and suburbs (see Wilson and Taeuber, 1978). Let $T_{..}$, $T_{i.}$, and T_{ij} be the total number of blacks or whites living in the metropolitan area, the city or suburb, and the neighborhood level, respectively. Also, let $P_{..}$, $P_{i.}$, and P_{ij} be the proportion of blacks or whites

¹ See the appendix for a fuller discussion on the effects of suppression on the analysis.

living in the metropolitan area, the city or suburb, and the neighborhood level, respectively. The following analysis of variance methods are employed:

$$T_{ss} = T..P..(1-P..) \quad (1)$$

and

$$B_{ss} = \frac{\sum T_{ij}(P_{ij} - P..) ^2}{T_{ss}} \quad (2)$$

where T_{ss} is the total sums of squares, and the numerator of B_{ss} is the between sums of squares. More specifically, T_{ss} is the total education variation in the population of a metropolitan area assuming it is composed of only two education subgroups; and B_{ss} is the total metropolitan segregation that can be attributed to the two education subgroups living in different residential areas, whether central city-suburb or neighborhood.²

The between sums of squares, B_{ss} , can be decomposed as follows:

$$B'_{ss} = \frac{\sum T_r(P_r - P..) ^2}{T_{ss}} \quad (3)$$

and

$$B''_{ss} = \frac{\sum T_{ij}(P_{ij} - P_r) ^2}{T_{ss}} \quad (4)$$

² Equation 2 is essentially an eta² measure that adjusts for the population composition that affects the outcome of a P* interaction and isolation indices. Not only does this asymmetric index (B_{ss}) adjust for population composition, but it also decomposes into two additive components of total metropolitan segregation, which are due to city-suburb (equation 3) and census tract (equation 4) segregation. (For a complete discussion of the eta² measure, see White, 1986:205-207, and Stearns and Logan, 1986.)

where B_{ss}' is the intrametropolitan segregation that is due to differences in the distribution of two education subgroups across central cities and suburbs; and B_{ss}'' is neighborhood segregation that is due to differences in the residence of two education subgroups within central cities and suburbs combined.

Clearly, this decomposition enables us to focus on the specific geographic factors that contribute to changes in interclass residential segregation. Components (2), (3), and (4) are used to measure the extent to which education groups (say, high school and college graduates) within black and white populations are living within the same geographic space. The total between sums of squares, (B_{ss}) represents the total association of education and residence, and can be interpreted as the probability that a person of education group one lives in the same neighborhood (across the total metropolitan area) as someone from education group two.

Results

Population distributions

Before analyzing the extent and change in interclass segregation, we must first consider how black and white population compositions have changed in the four SMSAs since 1960. This section focuses on the distribution of each race group between cities and suburbs and by education levels, and how these distributions have changed between 1960 and 1980.

According to Table 1, a greater number of whites than blacks lived in each SMSA in 1960; however, blacks experienced greater increases in their population composition in each SMSA than did whites from 1960 to 1980. The increase in the black populations is largely due to the continuation of black migration to cities throughout the 1970s.

Table 2 presents the percentages of blacks and whites in the four SMSAs who lived in central cities in 1960 and 1980. A greater percentage of blacks lived in central cities in 1960 and

1980 in each respective SMSA. They also underwent smaller declines in central city populations than did whites. Blacks in Atlanta experienced the greatest decline at 23.8 percent, while Houston underwent the smallest decline at 4.2 percent. On the other hand, whites left central cities for the suburbs in greater percentages than did blacks. This supports the idea that blacks have been largely concentrated in and restricted to central cities, while whites have freely moved into suburbs to escape central cities in search of safer living conditions and more suitable nonresidential amenities (Frey, 1979).

Table 3 presents the percentages of blacks and whites at each education level who lived in central cities of the four SMSAs in 1960 and 1980. This table shows 1) the decline in the percentage in central cities among blacks is inversely related to education (as noted in the change column), particularly in Atlanta and Philadelphia, 2) a similar pattern exists for whites in Atlanta and Houston, and 3) college educated whites experienced small declines in the central cities of Chicago and Philadelphia, probably because a large proportion of middle-class whites moved to the suburbs before the 1960 decade.

Tables 4 and 5 present distributions of the black and white populations by education attainment for central cities and suburbs of the four SMSAs. More specifically, Table 4 shows that education attainment levels increased substantially since 1960 among blacks, particularly persons with high school completion and one or more years of college. Increased educational attainment was greater in suburbs than central cities, probably because of the selective character of central city to suburb migration. Table 5 indicates that whites experienced the same pattern of change, but to a lesser extent than blacks, particularly in central cities. Prior selective city to suburban movement among whites may have reduced the magnitude of change observed.

The distributions presented in Tables 1 through 5 are relevant to the forthcoming discussion on patterns of interclass segregation because they chart the composition and movement

of black and white education subgroups, which are also partially incorporated into the decomposition models discussed in the data and methods section. These tables indicate 1) the increases in the education attainment levels of blacks and whites, 2) the continued movement of whites of all education levels to the suburbs, and 3) the substantial increases in the representation of blacks in the suburbs, particularly the highly educated, as Wilson (1987) suggests. At this point, I turn to the discussion on trends in black and white interclass segregation.

Trends in Interclass Segregation

The components of the decomposition model (as explained in the data and methods section) correspond to the ensuing tables in the following manner. The segregation indices in columns 1, 2, and 3 in Tables 6 through 9 are computed from the formulas for B_{ss} (total metropolitan segregation), B_{ss}^I (intrametropolitan segregation), and B_{ss}^{II} (neighborhood segregation) respectively.

These tables present the extent and change in black and white class segregation for the four SMSAs between 1960 and 1980. My discussion of these findings proceeds as follows. First, I discuss the extent of class segregation among blacks and whites in 1960 and 1980, then I elaborate on the change in interclass segregation for blacks and whites between 1960 and 1980. Since the debate on interclass segregation involves the residential space between middle and lower classes, I will focus on indices between extreme classes; when necessary, I will concentrate on the segregation indices between other education classes.

In 1960, the extent of interclass segregation among blacks was less than that among whites in each SMSA as indicated by values reported in columns one and three of the 1960 panels of Tables 6 through 9. The extreme classes were most segregated in 1960. For example, considering total metropolitan segregation, blacks with at least four years of schooling and college graduates were most segregated in Atlanta (Table 6, 1960 panel, column one) and Philadelphia

(Table 9, 1960 panel, column one) by indexes of .29 respectively, and least segregated in Houston (Table 8, 1960 panel, column one), by an index of .26. Conversely, among extreme white education groups, the most segregated were those with at least eight years of schooling completed and college graduates in Chicago, by an index of .76 (Table 7, 1960 panel, column one); the least segregation occurred between whites with five to seven years of schooling completed and those with some college (.32) in Atlanta (Table 6, 1960 panel, column one).

The decomposition of total segregation indicates there is more variation in total segregation that is due to the neighborhood-based segregation component (column three) than the area-based segregation component (column two) for blacks and whites in each SMSA in 1960.

Regarding the 1980 distributions, the 1980 panels of Tables 6 through 9 demonstrate that the extent of interclass segregation between extreme black education groups was greater than that among whites (as indicated in column one). This means that blacks with higher levels of education (college graduates) lived farther apart from those with lower levels of education (zero to four years) than those same classes among the white population in 1980. The 1980 area-based segregation component (as indicated in column two for Tables 6 through 9) among blacks and whites again had little impact on total segregation.

The magnitude of change in black and white residential differentiation by social class can, however, be observed in the change 1960 to 1980 panel of Tables 6 through 9. Results in these panels show that black interclass segregation increased from 1960 to 1980, while it decreased among whites over the same period. Black interclass segregation increase was greater between blacks with five to seven years of schooling completed and college graduates than between other classes in each SMSA (Atlanta, .22; Chicago, .18; Houston, .22; and Philadelphia, .20), while it increased to a greater extent in Atlanta than in the remaining SMSAs. Among the white population, the greatest decline in class segregation occurred in Chicago among high school

graduates and college graduates, at .58 (as exhibited in Table 7, column one), while the smallest decrease among the two extreme classes occurred between whites with at least four years of schooling completed and college graduates in Houston, at .11 (as noted in Table 8, column one).

These opposite changes among extreme black and white education subgroups are evident not only in the total distribution, but also in the neighborhood-based segregation component, in which case this component contributed more change to total segregation than area-based segregation (as shown in column 3 for Tables 6 through 9). These polarized indices among blacks and whites support Wilson's (1987) thesis that middle-class blacks increased the residential distance between themselves and lower-class blacks.

Summary

These findings clearly show that black interclass segregation increased from 1960 to 1980, and that interclass segregation among whites decreased. Increases in black spatial differentiation were low to high, which means that highly educated and less educated blacks became more isolated from each other over time. This change was substantial. Also, the magnitude of residential separation between high and less educated whites decreased over time. In the final analysis, support for the hypothesis that the residential distance increases as levels of education increase has been found for blacks, but not for whites.

While Massey and Eggers (1990) and Farley (1991) show that class segregation among blacks slightly changed between 1970 and 1980, I show that its extent greatly changed between 1960 and 1980. Unlike these studies, I add 1960 census data to this study, in order to gauge change in a broader time period. Another distinguishing feature of this study is that it observes levels of segregation using pairwise comparisons between all education subgroups. Conversely, Massey and Eggers's (1990) measure of interclass segregation is represented by a single metric: the average amount of spatial separation between all income classes in each SMSA. They also

analyze interclass segregation between affluent and poor blacks.³ By collapsing 12 income categories into 4 categories, and observing the average level of interclass segregation among those 4 classes, they are excluding levels of segregation between individual income groups. Thus, their aggregate approach consists of less gradation, and it may be related to their finding that "low and moderate" (p. 1171) levels of interclass segregation exist among blacks. Farley, meanwhile, observes segregation indices between one income/education group and all others. This means that he measures the level of segregation between one education subgroup and the mean of all other categories, or high school graduates in this case. Thus, his finding that black interclass segregation changed little or none may be a result of the way in which he measured residential segregation of a specific category from all others. By employing this method, he in fact observes segregation among a smaller number of education subgroups. Therefore, unlike Massey and Eggers's and Farley's methods of observing levels of interclass segregation, my method of pairwise comparison consists of more gradation (i.e., I measure segregation between more education categories than they do); this may be associated with my findings that social class segregation among blacks substantially increased over time, a finding consistent with Wilson's (1987) social isolation hypothesis.

By decomposing total metropolitan-residential segregation, I have been able to demonstrate that the neighborhood-based segregation component contributed more to overall class segregation than intra-metropolitan segregation. In other words, black and white segregation by social class depended more on segregation at the census tract level than segregation between central cities and suburbs.

³ Their income classes are defined in the following manner. Families who earn \$0—\$7,499 are classified as poor; families who earn \$7,500—\$14,999 are considered lower-middle-class; families who earn \$15,000—\$29,999 are classified as upper-middle-class; and families who earn \$30,000 or more are affluent.

When we consider the level of segregation between less educated and more educated blacks, we note similarities across SMSAs. The average level of black interclass segregation was greatest in the two southern SMSAs (Atlanta and Houston, respectively) followed by the northeast (Philadelphia) and midwest (Chicago) SMSAs. During both periods, Atlanta had the highest level of total metropolitan class segregation between extreme classes in the black population (.51). This implies that black college graduates in Atlanta underwent greater residential mobility than did those in Chicago, Houston, and Philadelphia. This also suggests that residential movement in Atlanta was not as rigid as in other SMSAs. For example, in Chicago in 1980, blacks at the two extreme levels of educational attainment lived closer to each other than in the remaining SMSAs. In fact, Erbe (1975), in her analysis of the Chicago SMSA as of 1970, observed that high-status black families lived in closer proximity to low-status blacks than lower class whites to other poor whites.

The patterns of change in black social class segregation were also similar among the four SMSAs. However, changes in Houston and Atlanta were greater than those in the nonsouthern SMSAs. For example, while the index that represents the total black segregation in Houston underwent an average increase of 8.3, that in Chicago underwent an average increase of 4.7.

Conversely, the average level of white interclass segregation was greatest among extreme education subgroups in Chicago in 1960, and greatest in Houston in 1980. Atlanta sustained the smallest average level of white interclass segregation for both periods. On the other hand, white class segregation decreased in each SMSA, and it generally decreased more in Chicago than in the other cities. In fact, the average decrease in white interclass segregation in Chicago was 11.7 (computed from column one in the change from 1960 to 1980 section of Table 9). In contrast, the average declines in white interclass segregation in Houston, Philadelphia, and Atlanta were 1.6, 3.1, and 5.7, respectively.

While we understand that black interclass segregation increased over time because of the positive change that occurred in spatial distance between extreme education subgroups, we must also comprehend why white interclass segregation decreased over time. This decrease may be related to the changing Hispanic composition of the white population, especially in Chicago and Atlanta, where white interclass segregation decreased by factors of 11.7 and 5.7 respectively. The growth of Hispanic groups occurred through immigration and higher fertility rates among Hispanic origin women (Bean and Tienda, 1987). In 1980, Hispanic origin groups (Mexicans, Cubans, and Puerto Ricans) in Atlanta, Chicago, Houston, and Philadelphia represented 1.2, 8.2, 14.6, and 2.5 percent of the total populations, respectively. While the 1960 and 1970 U.S. censuses do not allow us to completely determine the size and composition of the Hispanic population, the 1980 U.S. census does, with its use of the Spanish origin item. Therefore, the substantial decrease in white interclass segregation may in fact be associated with changing the composition and growth of the white Hispanic population, where it has become more intermarried (Bean and Tienda, 1987) with whites and thus residentially dispersed in white areas.

Additionally, the appreciable decline in residential segregation among white education subgroups may also be related to a diversity of white groups (one of which may be Hispanic whites) who moved from cities to suburbs, between 1960 and 1980. Not only could we be observing the movement of traditional white European groups, closer to other whites in the suburbs, but we could also be examining the movement of white Hispanics to white suburbs, as well.

There is no certain way to evaluate the aforementioned hypotheses concerning the decrease in white interclass segregation. However, if possible, we could determine what proportion of the white populations, in our study, consists of white Hispanic groups. This will show us what percentage of the decrease in white social class segregation was actually due to white Hispanics

and what percentage was due to non-Hispanic whites. Moreover, we could measure the spatial distance between Hispanic and white education subgroups in order to ascertain the degree of residential mobility among Hispanic groups, and thus see how close they lived to whites in 1980. We may also examine the extent and change in Hispanic interclass segregation to see if they are similar to those of whites during the same period.

Conclusion

Through evaluating trends in black and white segregation by education, we have asked two questions: (1) what is the extent of black and white interclass segregation by education?, and (2) how has it changed since 1960? Clearly, blacks witnessed extensive changes in the levels of interclass segregation during this period. This means that with the passage of antidiscrimination laws and the elimination of barriers in the housing market, blacks who were able to live elsewhere in the central city or the suburban ring did so. As Table 3 indicates, blacks with higher levels of education spatially distanced themselves from a large proportion of less educated and less affluent blacks who remained in the central cities. We find the extent to which middle-class blacks separated themselves from lower-class blacks to be great. Although blacks with high levels of education have substantially separated themselves from blacks with less education since 1960, blacks of all education, income, and occupational subgroups continue to be more segregated from whites than Asian Americans and Mexican Americans, especially in metropolitan areas with large black populations (Massey and Mullan, 1984; Massey and Denton, 1987, 1988, 1993; Massey and Eggers, 1990; White, 1987). For that reason, government policy must seek to eliminate housing discrimination which perpetuates social inequality based on skin color. Policy that seeks to end harsh racial practices in the housing market will ultimately enable middle-class blacks to enjoy similar patterns of residential mobility that middle-class whites enjoy. When this

eventually occurs, we should observe a decrease in black-white racial residential segregation.

Overall, this study contributes to the social isolation debate in the following manner. Along with including census data for the 1960 period and observing levels of segregation between all education classes (unlike Massey and Eggers (1990) and Farley (1991)), we not only find that blacks of dissimilar education classes have increasingly moved apart from each other, but those among whites have increasingly moved closer to each other. At this point, no study has demonstrated these findings as this study has. Therefore, this analysis introduces the following questions to the social isolation debate: (1) is substantial change in black interclass segregation associated with the use of pairwise comparison between all education categories?; and (2) why have extreme white education subgroups decreased the level of spatial isolation between themselves over time?

Toward this end, in order to understand the level and substantial change in black interclass segregation even more, we could compare them with class segregation among different minority groups (e.g., Asian Americans and Latino Americans). Including such groups will enable us to see the extent to which antidiscrimination laws in housing have benefitted the middle class among minority groups. Also, this approach will allow us to note which middle class sector of a particular group has not gained residential mobility as much as others, as a result of housing legislation and other contextual factors.

Finally, this analysis may also be further developed by considering two rival hypotheses proposed by Wilson (1987), including 1) the thesis that the outmigration of middle-class blacks contributed to the rising concentration of the ghetto poor, and 2) the claim that this outmigration also resulted in a decline in the presence of role models with connections to the world of work, from the lives of the underclass. Massey and Denton (1993), in **American Apartheid: Segregation and the Making of the Underclass**, quantitatively test Wilson's thesis that the out-

migration of middle-class blacks, in part, was responsible for the creation of the black underclass. They find, through their simulation of cities that are initially characterized with zero black-white segregation and equal black and white poverty rates, that the imposition of rigid racial segregation eventually concentrates high amounts of black poverty, which, in turn, creates hypersegregated neighborhoods with underclass blacks in them. Therefore, net of middle-class blacks supposedly moving out of the inner cities, high rates of poverty inevitably result in spatially isolated black neighborhoods, by virtue of their harsh racial segregation from whites as well as from meaningful employment, job networks, and suitable housing and schools, according to Massey and Denton (1993).

On the other hand, Mitchell Duneier (1992), in **Slim's Table**, questions the claim of Wilson and other sociologists, that the outmigration of middle-class blacks left the ghetto poor with no role models or mainstream patterns of behavior. Whereas Wilson asserts that the exodus of middle-class blacks from ghettos contributed to the lack of significant role models for inner city youths, he obviously believes that blacks of varying classes had meaningful interaction with each other before this exodus. However, Duneier challenges this line of reasoning by examining whether middle-class blacks ever interacted with lower-class blacks in the past, to the point where they were regarded as role models. In addition, he points out that Wilson (1987) and Elijah Anderson (1990) have provided little or no evidence about the extent to which these classes have interacted in urban ghettos; and he thus claims their accounts of class interaction remain "anecdotal and speculation" (Mitchell, 1992:129). Thus, in order to understand the true nature of class interaction among blacks, Duneier discusses W.E.B. Dubois' interpretation of it, in **The Philadelphia Negro**. According to Dubois, middle-class blacks had little to do with lower-class blacks, even in close physical proximity. "They teach the masses to a very small extent, mingle with them but little, do not...hire their labor" (Dubois, 1899:317). In short, Duneier introduces

Dubois' account of class interaction among blacks (or a lack thereof) in order to demonstrate that Wilson's role model theory is merely speculation; and thus the alleged exodus of middle-class blacks in fact did not contribute to the lack of role models, since there was actually no established relationship between lower- and middle-class blacks in the past.

By considering these two rival hypotheses in this study, we could ultimately understand what social and economic circumstances, if any, result from the extensive spatial distributions among blacks and whites. Furthermore, employing such hypotheses to this study will not only allow us to measure the extent and change of interclass segregation among blacks and whites, but it will also permit us to explore the true nature of interaction between black and white education subgroups as they attempt to move farther apart or closer to each other.

References

- Anderson, Elijah. 1990. **Streetwise: Race, Class, and Change in an Urban Community**. Chicago: University of Chicago Press.
- Bean, Frank B. and Marta Tienda. 1987. **The Hispanic Population of the United States**. New York: Russell Sage Foundation.
- Drake, St. Clair and Horace R. Cayton. 1945. **Black Metropolis: A Study of Negro Life in a Northern City**. New York: Harcourt, Brace and Company.
- Dubois, W.E.B. 1899. **The Philadelphia Negro**. New York: Schocken Books.
- Duneier, Mitchell. 1992. **Slim's Table: Race, Respectability, and Masculinity**. Chicago: University of Chicago Press.
- Erbe, Brigitte Mach. 1975. "Race and Socioeconomic Segregation." *American Sociological Review* 40 (December):801-812.
- Farley, Reynolds. 1991. "Residential Segregation of Social and Economic Groups Among Blacks, 1970-80." In **The Urban Underclass**, edited by Christopher Jenks and Paul E. Peterson. Washington DC: The Brookings Institute.
- Farley, Reynolds, and William H. Frey. 1994. "Changes in the Segregation of Whites from Blacks during the 1980s: Small Steps Toward a More Integrated Society." *American Sociological Review* 59:23-45.
- Fielding, Elaine L. and Karl Taeuber. 1990. "The Social Class Isolation of Poor Children: A Case Study of Milwaukee." CDE Working Paper No. 90-12. Madison: Center for Demography and Ecology, University of Wisconsin.
- Frazier, E. Franklin. 1957. **Black Bourgeoisie: The Rise of the New Middle Class in the United States**. New York: Collier Books.
- Frey, William H. 1979. "Central City White Flight: Racial and Nonracial Causes." *American Sociological Review* 44:425-448.

- Hershberg, Theodore, Alan N. Burstein, Eugene P. Ericksen, Stephanie Greenberg, and William L. Yancey. 1979. "A Tale of Three Cities: Blacks, Immigrants and Opportunity in Philadelphia: 1850-1880, 1930 and 1970." *The Annals of the American Academy of Political and Social Science* 441:195-215.
- Kusmer, Kenneth L. 1978. **A Ghetto Takes Shape: Black Cleveland, 1870-1930**. Chicago: University of Illinois Press.
- Landry, Bart. 1987. **The New Black Middle Class**. University of California Press.
- Liebersohn, Stanley. 1980. **A Piece of the Pie: Blacks and White Immigrants Since 1880**. Los Angeles: University of California Press.
- Luckey, Leon. 1989. "Residential Segregation by Race and Social Class in Four Metropolitan Areas, 1980." Unpublished Master's Thesis. University of Wisconsin-Madison.
- Massey, Douglas S., and Nancy A. Denton. 1985. "Spatial Assimilation as a Socioeconomic Outcome." *American Sociological Review* 50:95-105.
- Massey, Douglas S., and Nancy A. Denton. 1987. "Trends in the Residential Segregation of Blacks, Hispanics, and Asians: 1970-1980." *American Sociological Review* 52:802-25.
- Massey, Douglas S. and Nancy A. Denton. 1988. "Suburbanization and Segregation in U.S. Metropolitan Areas." *American Journal of Sociology* 94:592-626.
- Massey, Douglas S., and Nancy A. Denton. 1993. **American Apartheid: Segregation and the Making of the Underclass**. Massachusetts: Harvard University Press.
- Massey, Douglas S., and Mitchell L. Eggers. 1990. "The Ecology of Inequality: Minorities and the Concentration of Poverty 1970-1980." *American Journal of Sociology* 95:1153-88.
- Massey, Douglas S., and Brendan P. Mullan. 1984. "Processes of Hispanic and Black Spatial Assimilation." *American Journal of Sociology* 89 :836-873.
- Osofsky, Gilbert. 1963. **Harlem: The Making of a Ghetto**. New York: Harper and Row Publishers.

- Stearns, Linda Brewster, and John R. Logan. 1986. "Measuring Trends in Segregation: Three Dimensions, Three Measures." *Urban Affairs Quarterly* 22:124-150.
- Taeuber, Karl E. and Alma F. Taeuber. 1965. **Negroes in Cities**. Chicago: Aldine Publishing Company.
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-2-277.
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-2-119(2).
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-119(3).
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-2-184(1).
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-2-283(1).
- U.S. Bureau of the Census. 1983. 1980 Census of Population and Housing:PHC80-2-283(2).
- White, Michael J. 1986. "Segregation And Diversity Measures In Population Distribution." *Population Index* 52:198-221.
- White, Michael J. 1987. **American Neighborhoods and Residential Differentiation**. New York: Russell Sage Foundation.
- Wilson, Franklin D., and Karl E. Taeuber. 1978. "Residential and School Segregation: Some Tests of Their Association." In W. Parker Frisbie and Frank D. Bean, **The Demography of Racial and Ethnic Groups**. New York: Academic Press.
- Wilson, Franklin D. 1979. **Residential Consumption, Economic Opportunity, and Race**. New York: Academic Press.
- Wilson, William J. 1987. **The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy**. Chicago: The University of Chicago Press.
- Zunz, Olivier. 1982. **The Changing Face of Inequality: Urbanization, Industrial Development, and Immigrants in Detroit, 1880-1920**. Chicago: The University of Chicago Press.

Appendix A: Suppression

Suppression occurs when census tracts have fewer than 400 residents in them, in order to maintain the confidentiality of specific individuals (U.S. Bureau of the Census, 1983). We incorporate two forms of suppression in this thesis: primary and secondary. For that reason, our decision rule varies slightly from that of Fielding and Taeuber (1990). In order to include suppressed tracts in our analysis, we use the following decision rule. The black or white population must be at least 150 and represent 80 percent of the nonwhite or nonblack population, respectively. Primary suppression occurs when the group with the greatest population in a tract (the dominant group) meets the decision rule. On the other hand, secondary suppression applies whenever a group's population is less than the dominant group's population, but this nondominant group's population is at least 150 and 80 percent of the nonwhite or nonblack population.

The following examples illustrate the use of primary and secondary suppression.

<u>Population</u>	<u>Type of Suppression</u>	<u>Source of Suppressed Pop.</u>
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Example 1:

Total	1100	None	
White	1000	Primary	Total population
Black	50	None	
Asian	50	None	

Example 2:

Total	750	None	
White	500	Primary	(Total pop) x (percent white)
Black	200	Secondary	(Total pop) x (percent black)
Asian	50	None	

Example 1: In this case, whites (the dominant group) represent 95 percent of the nonblack population; therefore, substituting the total population for whites offers little bias. Because the black population is not equal to 150 and is not 80 percent of the nonwhite population, it is dropped from the analysis.

Example 2: Here, blacks (the nondominant group) meet the decision rule in that they represent 80 percent of the nonwhite population, and their population exceeds 150. Thus, multiplying the total education distribution by the percent of blacks and whites in the tract, respectively, provides a good approximation of both black and white characteristics.

Table A1 exhibits the percentages of black education levels that are and are not suppressed at the metropolitan level of the four areas for 1960 and 1980. Blacks are only subjected to secondary suppression in that they represent the nondominant group in suppressed tracts, which meets the decision rule of representing a population of 150 and 80 percent of the nonwhite population. The effect of secondary suppression is noted by comparing the distribution with no suppression and the distribution with secondary suppression. Clearly, secondary suppression had generally no impact on the distribution of black education subgroups. In fact, the only changes that occurred between these two distributions were -19.6 to -21.9 and -14.0 to -13.2, among less educated blacks in Atlanta and Houston, respectively. The effect of suppression is seen, however, when we compare the distribution from the published reports with the distribution containing no suppression. In 1960, less educated blacks were suppressed more, while in 1980 this was true only for Houston. Highly educated blacks were suppressed more in 1980 for the three other SMSAs. The probable effect of not adjusting for suppression would lower the level of interclass segregation in both 1960 and 1980.

Table A2 displays the percentages of white education levels that are and are not suppressed for the four metropolitan areas in 1960 and 1980. Whites were more likely to be subjected to primary suppression since they represented the dominant group in most suppressed tracts. The effect of primary suppression is noted by comparing the distribution with no suppression included with the distribution which consists of estimates of primary suppression. As with blacks, less educated whites in 1960 were more suppressed than were highly educated whites in all four cities. However, in 1980, whites of all education categories in all SMSAs

tended to be more suppressed. Evidently, there was a greater amount of suppression in 1980 than in 1960 among white education groups. When we compare the distribution which includes primary suppression with the distribution reported in published census volumes, the same overall pattern of suppression in each period for all cities can be observed. In the final analysis, including population counts from both suppressed and non-suppressed census tracts in the analysis reduces the extent of bias in observed levels of segregation by education groups for both blacks and whites.

Table A1. The effect of suppression at the tract level of the black population by levels of schooling completed, in four metropolitan areas, 1960 and 1980.

Education Levels	No suppression met area (%)			Secondary suppression & no suppression met area (%)		
	1960	1980	Change	1960	1980	Change
Atlanta						
0-4	25.6	6.0	-19.6	27.2	5.3	-21.9
5-7	28.6	8.6	-20.0	28.6	8.7	-19.9
8	8.5	4.6	-3.9	8.5	4.6	-3.9
HS 1-3	17.6	17.7	+0.1	17.6	17.7	+0.1
HS 4	11.6	29.7	+18.1	11.6	29.7	+18.1
C 1-3	3.3	15.7	+12.5	3.3	15.8	+12.5
C 4+	3.2	18.2	+15.0	3.2	18.2	+15.0
Chicago						
0-4	12.8	4.5	-8.3	12.8	4.5	-8.3
5-7	18.9	8.0	-10.9	18.9	8.0	-10.9
8	16.6	8.0	-8.6	16.6	8.1	-8.5
HS 1-3	23.6	22.5	-1.1	23.6	22.5	-1.1
HS 4	17.6	29.9	+12.3	17.6	29.9	+12.3
C 1-3	7.2	17.6	+10.4	7.2	17.6	+10.4
C 4+	3.2	9.3	+6.1	3.2	9.3	+6.1
Houston						
0-4	20.2	6.2	-14.0	20.2	6.3	-13.2
5-7	23.1	9.6	-13.5	23.1	9.6	-13.5
8	11.0	5.1	-5.9	11.0	5.1	-5.9
HS 1-3	21.6	20.8	-0.8	21.6	20.8	-0.8
HS 4	14.0	27.7	+13.7	14.0	27.7	+13.7
C 1-3	5.7	16.0	+10.3	5.7	16.0	+10.3
C 4+	4.5	14.6	+10.1	4.5	14.6	+10.1
Philadelphia						
0-4	14.0	4.1	-9.9	14.0	4.1	-9.9
5-7	21.7	9.1	-12.6	21.7	9.1	-12.6
8	14.9	6.7	-8.2	14.9	6.7	-8.2
HS 1-3	26.2	24.3	-1.9	26.2	24.3	-1.9
HS 4	16.8	35.0	+18.2	16.8	35.0	+18.2
C 1-3	3.7	11.2	+7.5	3.7	11.2	+7.5
C 4+	2.8	9.5	+6.7	2.8	9.5	+6.7

continued...

Table A1. (continued)

Education Levels	Total values reported from Census data met area (%)		
	1960	1980	Change
Atlanta			
0-4	25.8	7.7	-18.1
5-7	28.0	11.1	-16.9
8	8.6	5.4	-3.2
HS 1-3	18.5	20.6	+2.1
HS 4	12.1	31.2	+19.1
C 1-3	3.7	12.6	+8.9
C 4+	3.4	11.4	+8.0
Chicago			
0-4	12.7	4.8	-7.9
5-7	18.6	8.5	-10.1
8	16.6	8.2	-8.4
HS 1-3	23.2	23.1	-0.1
HS 4	17.8	29.6	+11.8
C 1-3	7.4	17.4	+10.0
C 4+	3.7	8.4	+4.7
Houston			
0-4	18.2	6.2	-12.0
5-7	22.6	9.5	-13.1
8	11.2	5.1	-6.1
HS 1-3	22.6	21.4	-1.2
HS 4	14.8	29.4	+14.6
C 1-3	5.9	16.3	+10.4
C 4+	4.5	12.0	+7.5
Philadelphia			
0-4	14.1	4.8	-9.3
5-7	21.7	10.1	-11.6
8	14.9	6.3	-8.6
HS 1-3	25.8	26.6	+0.8
HS 4	16.7	34.2	+17.5
C 1-3	3.8	10.9	+7.1
C 4+	2.9	6.9	+4.0

Table A2. The effect of suppression at the tract level of the white population by levels of schooling completed, in four metropolitan areas, 1960 and 1980.

Education Levels	No suppression met area (%)			Primary suppression & no suppression met area (%)		
	1960	1980	Change	1960	1980	Change
Atlanta						
0-4	5.8	2.3	-3.5	7.3	2.4	-4.9
5-7	14.8	6.3	-8.5	16.8	6.5	-10.3
8	8.9	4.3	-4.6	9.2	4.4	-4.8
HS 1-3	19.0	15.8	-3.8	19.5	16.1	-3.4
HS 4	26.5	29.6	+3.1	24.9	29.7	+4.8
C 1-3	13.0	18.0	+5.0	11.9	18.3	+6.8
C 4+	11.0	22.9	+11.9	10.4	22.7	+12.3
Chicago						
0-4	7.3	2.3	-5.0	9.3	2.7	-6.6
5-7	11.0	4.8	-6.2	12.2	4.8	-7.4
8	20.2	8.6	-11.6	19.5	8.7	-10.8
HS 1-3	21.3	13.6	-7.7	20.1	13.5	-6.6
HS 4	21.3	33.2	+11.9	22.3	33.4	+11.1
C 1-3	9.0	16.4	+7.4	7.4	16.5	+9.1
C 4+	8.9	20.2	+11.3	9.2	20.4	+11.2
Houston						
0-4	6.1	2.3	-3.8	9.8	3.1	-6.7
5-7	12.8	5.1	-7.7	13.5	5.8	-7.7
8	9.6	3.7	-5.9	9.7	3.9	-5.8
HS 1-3	22.8	14.2	-6.6	27.2	14.3	-12.9
HS 4	25.0	28.9	+3.9	21.7	29.4	+7.7
C 1-3	12.7	19.2	+6.5	9.5	19.5	+10.0
C 4+	10.8	22.8	+12.0	8.6	23.9	+15.3
Philadelphia						
0-4	5.8	2.4	-3.4	6.0	2.6	-3.4
5-7	13.0	6.1	-6.9	13.2	6.2	-7.0
8	17.9	8.1	-9.8	18.0	8.3	-9.7
HS 1-3	21.8	16.0	-5.8	23.2	19.7	-3.5
HS 4	25.6	35.9	+10.3	24.3	32.0	+7.7
C 1-3	7.4	13.2	+5.8	7.1	13.4	+6.3
C 4+	8.6	18.3	+9.7	8.2	17.8	+9.6

continued...

Table A2. (continued)

Education Levels	Total values reported from Census data met area (%)		
	1960	1980	Change
Atlanta			
0-4	5.8	2.3	-3.5
5-7	14.8	6.3	-8.5
8	8.8	4.3	-4.5
HS 1-3	19.6	15.8	-3.8
HS 4	26.5	29.6	+3.1
C 1-3	13.0	18.6	+5.6
C 4+	11.4	23.2	+11.8
Chicago			
0-4	5.9	2.3	-3.6
5-7	9.8	4.4	-5.4
8	19.8	8.7	-11.1
HS 1-3	20.5	13.6	-6.9
HS 4	24.9	34.1	+9.2
C 1-3	10.1	16.6	+6.5
C 4+	9.1	20.3	+11.2
Houston			
0-4	6.4	2.5	-3.9
5-7	13.0	5.3	-7.7
8	9.8	3.8	-6.0
HS 1-3	21.0	14.2	-6.8
HS 4	25.0	29.7	+4.7
C 1-3	13.0	19.8	+6.8
C 4+	11.8	24.7	+12.9
Philadelphia			
0-4	5.9	1.8	-4.1
5-7	13.1	5.5	-7.6
8	18.0	7.5	-10.5
HS 1-3	21.6	16.1	-5.5
HS 4	25.4	37.8	+12.4
C 1-3	7.4	12.6	+5.2
C 4+	8.6	18.7	+10.1

Table 1. Number and percentage change in the black and white populations in four metropolitan areas, 1960 and 1980.

Metropolitan Area	Blacks		Whites	
	1960 (000)	Change 1960 to 1980 (%)	1960 (000)	Change 1960 to 1980 (%)
Atlanta	231	+116.0	785	+93.5
Chicago	890	+60.3	5,301	-1.72
Houston	246	+115.0	994	+112.2
Philadelphia	671	+31.7	3,662	+1.12

Table 2. Percentage blacks and whites in the central cities of the metropolitan areas, 1960 and 1980.

Metropolitan Area	Blacks			Whites		
	1960	1980	Change	1960	1980	Change
Atlanta	80.5	56.7	-23.8	38.3	9.1	-29.2
Chicago	91.4	83.9	-7.5	51.2	28.6	-22.6
Houston	87.4	83.2	-4.2	72.5	46.4	-26.1
Philadelphia	78.8	72.3	-6.5	40.1	26.6	-13.5

Table 3. Percentage blacks and whites in the central cities of the metropolitan areas by years of schooling completed, 1960 and 1980.

Education Levels	Blacks Percent in city			Whites Percent in city		
	1960	1980	Change	1960	1980	Change
Atlanta						
0-4	64.9	49.6	-15.3	31.6	14.6	-17.0
5-7	70.3	42.5	-27.8	31.3	12.0	-19.3
8	76.0	40.6	-35.4	37.5	10.1	-27.4
HS 1-3	83.4	41.0	-42.4	35.9	9.0	-26.9
HS 4	85.8	34.6	-51.2	36.2	8.0	-28.2
C 1-3	91.4	26.6	-64.8	40.9	12.2	-28.7
C 4	90.5	25.5	-65.0	42.0	19.0	-23.0
Chicago						
0-4	91.2	84.4	-6.8	74.2	62.9	-11.3
5-7	91.7	86.4	-5.3	64.8	57.3	-7.5
8	91.4	87.1	-4.3	60.6	46.5	-14.1
HS 1-3	91.8	85.5	-6.3	57.1	40.1	-17.0
HS 4	92.7	82.0	-10.7	47.8	28.0	-19.8
C 1-3	93.0	81.6	-11.4	46.2	25.4	-20.8
C 4	93.0	79.8	-13.2	35.4	26.7	-8.7
Houston						
0-4	64.5	62.3	-2.2	58.8	54.3	-4.5
5-7	75.0	72.8	-2.2	60.0	49.3	-10.7
8	79.2	76.0	-3.2	62.6	43.4	-19.2
HS 1-3	82.5	78.9	-3.6	61.1	41.0	-20.1
HS 4	84.1	81.5	-2.6	65.0	40.2	-24.8
C 1-3	85.7	75.1	-10.6	70.0	44.6	-25.4
C 4	80.6	59.0	-21.6	70.6	51.7	-18.9
Philadelphia						
0-4	81.5	75.5	-6.0	59.6	45.6	-14.0
5-7	81.8	71.9	-9.9	50.2	42.8	-7.4
8	81.5	60.8	-20.7	49.7	37.6	-12.1
HS 1-3	83.9	71.3	-12.6	46.9	36.8	-10.1
HS 4	83.9	60.0	-23.9	36.9	25.4	-11.5
C 1-3	83.2	55.1	-28.1	32.8	24.0	-8.8
C 4	80.1	45.0	-35.1	29.4	21.0	-8.4

Table 4. Percentage distribution of the black population by years of schooling completed for central cities and suburbs of four metropolitan areas, 1960 and 1980.

Education Levels	city (%)			suburb (%)		
	1960	1980	Change	1960	1980	Change
Atlanta						
0-4	23.7	7.5	-16.2	37.3	4.1	-33.7
5-7	26.7	10.7	-16.2	33.6	7.6	-26.0
8	8.7	5.4	-3.3	8.1	4.2	-3.9
HS 1-3	19.6	21.1	+1.5	11.6	16.0	+4.4
HS 4	13.3	29.7	+16.4	6.5	29.7	+23.2
C 1-3	4.1	12.1	+8.0	1.1	17.7	+16.6
C 4+	3.9	13.4	+9.5	1.2	20.8	+19.6
Chicago						
0-4	12.8	4.6	-8.2	13.2	4.3	-8.9
5-7	18.8	8.3	-10.5	19.7	6.6	-13.1
8	16.5	8.4	-8.1	18.0	6.3	-11.7
HS 1-3	23.6	23.0	-0.6	24.1	19.6	-4.5
HS 4	17.7	29.4	+11.7	15.9	32.4	+16.5
C 1-3	7.3	17.2	+9.9	6.3	19.5	+13.2
C 4+	3.3	8.9	+5.6	2.8	11.4	+8.6
Houston						
0-4	16.9	5.9	-11.0	31.2	7.4	-23.8
5-7	22.4	9.3	-13.1	25.3	10.4	-14.9
8	11.3	5.2	-6.1	9.9	4.9	-5.0
HS 1-3	23.2	21.9	-1.3	16.5	17.4	+0.9
HS 4	15.2	30.2	+15.0	9.6	20.4	+10.8
C 1-3	6.3	16.0	+9.7	3.5	15.8	+12.3
C 4+	4.7	11.5	+6.8	3.8	23.7	+19.9
Philadelphia						
0-4	13.8	5.0	-8.8	14.9	2.7	-12.2
5-7	21.5	10.5	-11.0	22.8	6.8	-16.0
8	14.7	6.5	-8.2	15.9	7.0	-8.9
HS 1-3	26.6	27.8	+1.2	24.2	18.6	-5.6
HS 4	17.1	33.5	+16.4	15.6	37.5	+21.9
C 1-3	3.7	9.9	+6.2	3.6	13.4	+9.8
C 4+	2.7	6.9	+4.2	3.1	14.0	+10.9

Table 5. Percentage distribution of the white population by years of schooling completed for central cities and suburbs of four metropolitan areas, 1960 and 1980

Education Levels	city (%)			suburb (%)		
	1960	1980	Change	1960	1980	Change
Atlanta						
0-4	6.3	2.6	-3.7	7.8	2.3	-5.5
5-7	14.5	6.4	-8.1	18.1	6.5	-11.6
8	9.5	3.7	-5.8	9.0	4.5	-4.5
HS 1-3	19.3	11.8	-7.5	19.6	16.6	-3.0
HS 4	24.9	19.7	-5.2	24.9	30.9	+6.0
C 1-3	13.4	19.2	+5.8	11.0	18.2	+7.2
C 4+	12.0	36.6	+24.6	9.5	21.0	+11.5
Chicago						
0-4	6.5	5.2	-1.3	6.1	1.5	-4.6
5-7	9.5	8.4	-1.1	8.9	3.0	-5.9
8	17.9	12.3	-5.6	19.1	6.9	-12.2
HS 1-3	17.5	16.5	-1.0	20.5	12.1	-8.4
HS 4	17.8	28.3	+10.5	22.7	35.8	+13.1
C 1-3	6.9	12.7	+5.8	11.8	18.3	+6.5
C 4+	23.8	16.6	-7.2	10.8	22.3	+11.5
Houston						
0-4	6.8	3.8	-3.0	9.4	2.6	-6.8
5-7	12.9	6.4	-6.5	16.9	5.4	-11.5
8	9.7	3.8	-5.9	11.4	4.1	-7.3
HS 1-3	20.4	13.0	+3.3	14.9	15.3	+0.4
HS 4	24.6	26.2	+1.6	26.1	31.9	+5.8
C 1-3	13.4	19.3	+5.9	11.3	19.7	+8.4
C 4+	12.2	27.5	+15.3	10.0	21.0	+11.0
Philadelphia						
0-4	8.3	1.3	-7.0	5.3	1.4	-3.9
5-7	15.6	3.6	-12.0	14.3	4.4	-9.9
8	20.6	4.3	-16.3	19.4	6.4	-13.0
HS 1-3	22.9	9.0	-13.9	9.9	14.1	+4.2
HS 4	21.3	27.9	+6.6	10.1	38.9	+28.8
C 1-3	5.5	46.7	+41.2	10.6	14.0	+3.4
C 4+	5.7	7.2	+1.5	30.4	20.9	-9.5

Table 6. Indices of segregation among education groups
for blacks and whites in Atlanta, 1960 and 1980

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1960						
0-4 v. 5-7	.03	.02	.01	.00	.02	.02
0-4 v. 8	.05	.08	.01	.00	.04	.08
0-4 v. HS 1-3	.09	.11	.04	.00	.05	.11
0-4 v. HS 4	.16	.21	.04	.01	.12	.20
0-4 v. C 1-3	.21	.38	.03	.01	.18	.37
0-4 v. C 4+	.29	.46	.03	.01	.26	.45
5-7 v. 8	.02	.03	.00	.00	.02	.03
5-7 v. HS 1-3	.04	.07	.02	.01	.02	.06
5-7 v. HS 4	.09	.18	.02	.00	.07	.18
5-7 v. C 1-3	.14	.32	.02	.01	.12	.31
5-7 v. C 4+	.20	.42	.02	.02	.18	.40
8 v. HS 1-3	.03	.03	.00	.00	.03	.03
8 v. HS 4	.08	.09	.01	.00	.07	.09
8 v. C 1-3	.17	.23	.02	.00	.15	.23
8 v. C 4+	.26	.34	.02	.01	.24	.33
HS 1-3 v. HS 4	.05	.07	.00	.00	.05	.07
HS 1-3 v. C 1-3	.12	.18	.01	.00	.11	.18
HS 1-3 v. C 4+	.18	.29	.00	.01	.18	.28
HS 4 v. C 1-3	.07	.05	.00	.00	.07	.05
HS 4 v. C 4+	.13	.13	.00	.01	.13	.12
C 1-3 v. C 4+	.11	.04	.00	.00	.11	.04

continued...

Table 6. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1980						
0-4 v. 5-7	.04	.03	.00	.00	.04	.03
0-4 v. 8	.10	.06	.01	.01	.09	.05
0-4 v. HS 1-3	.09	.04	.00	.00	.09	.04
0-4 v. HS 4	.17	.06	.02	.00	.15	.06
0-4 v. C 1-3	.42	.16	.05	.00	.37	.16
0-4 v. C 4+	.51	.23	.05	.01	.46	.22
5-7 v. 8	.05	.03	.00	.00	.05	.03
5-7 v. HS 1-3	.06	.03	.00	.00	.06	.03
5-7 v. HS 4	.14	.08	.00	.00	.14	.08
5-7 v. C 1-3	.37	.21	.03	.00	.34	.21
5-7 v. C 4+	.47	.31	.03	.01	.44	.30
8 v. HS 1-3	.03	.02	.00	.00	.03	.02
8 v. HS 4	.07	.05	.00	.00	.07	.05
8 v. C 1-3	.25	.15	.01	.00	.24	.15
8 v. C 4+	.35	.24	.02	.01	.33	.23
HS 1-3 v. HS 4	.07	.05	.00	.00	.07	.05
HS 1-3 v. C 1-3	.24	.15	.02	.00	.22	.15
HS 1-3 v. C 4+	.37	.29	.03	.02	.34	.27
HS 4 v. C 1-3	.09	.05	.01	.00	.08	.05
HS 4 v. C 4+	.21	.17	.01	.02	.20	.15
C 1-3 v. C 4+	.06	.05	.00	.01	.06	.04

continued...

Table 6. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation		
	black	white	black	white	black	white	
Change 1960 to 1980							
0-4 v. 5-7	+ .01	+ .01	- .01	.00	+ .02	+ .01	
0-4 v. 8	+ .05	- .02	.00	+ .01	+ .05	- .03	
0-4 v. HS 1-3	.00	- .07	- .04	.00	+ .04	- .07	
0-4 v. HS 4	+ .01	- .15	- .02	- .01	+ .03	- .14	
0-4 v. C 1-3	+ .21	- .22	+ .02	- .01	+ .19	- .21	
0-4 v. C 4+	+ .22	- .23	+ .02	.00	+ .20	- .23	
5-7 v. 8	+ .03	.00	.00	.00	+ .03	.00	
5-7 v. HS 1-3	+ .02	- .04	- .02	- .01	+ .04	- .03	
5-7 v. HS 4	+ .05	- .10	- .02	.00	+ .07	- .10	
5-7 v. C 1-3	+ .23	- .11	+ .01	- .01	+ .22	- .10	
5-7 v. C 4+	+ .27	- .11	+ .01	- .01	+ .26	- .10	
8 v. HS 1-3	.00	- .01	.00	.00	.00	- .01	
8 v. HS 4	- .01	- .04	- .01	.00	.00	- .04	
8 v. C 1-3	+ .08	- .08	- .01	.00	+ .09	- .08	
8 v. C 4+	+ .09	- .10	.00	.00	+ .09	- .10	
HS 1-3 v. HS 4	+ .02	- .02	.00	.00	+ .02	- .02	
HS 1-3 v. C 1-3	+ .12	- .03	+ .01	.00	+ .11	- .03	
HS 1-3 v. C 4+	+ .19	.00	+ .03	+ .01	+ .16	- .01	
HS 4 v. C 1-3	+ .02	.00	+ .01	.00	+ .01	.00	
HS 4 v. C 4+	+ .08	+ .04	+ .01	+ .01	+ .07	+ .03	
C 1-3 v. C 4+	- .05	+ .01	.00	+ .01	- .05	.00	

Table 7. Indices of segregation among education groups for blacks and whites in Chicago, 1960 and 1980.

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1960						
0-4 v. 5-7	.03	.06	.00	.01	.03	.05
0-4 v. 8	.05	.08	.00	.01	.05	.07
0-4 v. HS 1-3	.07	.10	.00	.02	.07	.08
0-4 v. HS 4	.13	.17	.00	.05	.13	.12
0-4 v. C 1-3	.19	.30	.00	.08	.19	.22
0-4 v. C 4+	.28	.63	.01	.00	.27	.63
5-7 v. 8	.02	.03	.00	.01	.02	.02
5-7 v. HS 1-3	.04	.04	.00	.00	.04	.04
5-7 v. HS 4	.08	.11	.00	.02	.08	.09
5-7 v. C 1-3	.13	.22	.00	.03	.13	.19
5-7 v. C 4+	.20	.68	.00	.01	.20	.67
8 v. HS 1-3	.02	.02	.00	.00	.02	.02
8 v. HS 4	.05	.07	.00	.02	.05	.05
8 v. C 1-3	.10	.15	.00	.02	.10	.13
8 v. C 4+	.19	.76	.00	.01	.19	.75
HS 1-3 v. HS 4	.03	.04	.00	.01	.03	.03
HS 1-3 v. C 1-3	.07	.11	.00	.01	.07	.10
HS 1-3 v. C 4+	.14	.75	.00	.01	.14	.74
HS 4 v. C 1-3	.04	.04	.00	.00	.04	.04
HS 4 v. C 4+	.11	.75	.00	.00	.11	.75
C 1-3 v. C 4+	.09	.54	.00	.00	.09	.54

continued...

Table 7. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1980						
0-4 v. 5-7	.07	.06	.00	.00	.07	.06
0-4 v. 8	.08	.11	.00	.02	.08	.09
0-4 v. HS 1-3	.07	.12	.00	.03	.07	.09
0-4 v. HS 4	.11	.15	.00	.04	.11	.11
0-4 v. C 1-3	.19	.26	.00	.08	.19	.18
0-4 v. C 4+	.39	.33	.00	.06	.39	.27
5-7 v. 8	.05	.07	.00	.02	.05	.05
5-7 v. HS 1-3	.04	.08	.00	.02	.04	.06
5-7 v. HS 4	.08	.13	.00	.04	.08	.09
5-7 v. C 1-3	.17	.24	.01	.08	.16	.16
5-7 v. C 4+	.38	.34	.01	.07	.37	.27
8 v. HS 1-3	.04	.03	.00	.01	.04	.02
8 v. HS 4	.06	.07	.00	.03	.06	.04
8 v. C 1-3	.14	.17	.01	.04	.13	.13
8 v. C 4+	.34	.29	.01	.03	.33	.26
HS 1-3 v. HS 4	.05	.05	.01	.02	.04	.03
HS 1-3 v. C 1-3	.12	.14	.00	.02	.12	.12
HS 1-3 v. C 4+	.31	.28	.01	.02	.30	.26
HS 4 v. C 1-3	.04	.04	.00	.00	.04	.04
HS 4 v. C 4+	.19	.17	.00	.00	.19	.17
C 1-3 v. C 4+	.12	.07	.00	.00	.12	.07

continued...

Table 7. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation		
	black	white	black	white	black	white	
Change 1960 to 1980							
0-4 v. 5-7	+.04	.00	.00	-.01	+.04	+.01	
0-4 v. 8	+.03	+.03	.00	+.01	+.03	+.02	
0-4 v. HS 1-3	.00	+.02	.00	+.01	.00	+.01	
0-4 v. HS 4	-.02	-.02	.00	-.01	-.02	-.01	
0-4 v. C 1-3	.00	-.04	.00	.00	.00	-.04	
0-4 v. C 4+	+.11	-.30	-.01	+.06	+.12	-.36	
5-7 v. 8	+.03	+.04	.00	-.01	+.03	+.03	
5-7 v. HS 1-3	.00	+.04	.00	+.02	.00	+.02	
5-7 v. HS 4	.00	+.02	.00	+.02	.00	.00	
5-7 v. C 1-3	+.04	+.02	+.01	+.05	+.03	-.03	
5-7 v. C 4+	+.18	-.34	+.01	+.06	+.17	-.40	
8 v. HS 1-3	+.02	+.01	.00	+.01	+.02	.00	
8 v. HS 4	+.01	.00	.00	+.01	+.01	-.01	
8 v. C 1-3	+.04	+.02	+.01	+.02	+.03	.00	
8 v. C 4+	+.15	-.47	+.01	+.02	+.14	-.49	
HS 1-3 v. HS 4	+.02	+.01	+.01	+.01	+.01	.00	
HS 1-3 v. C 1-3	+.05	+.03	.00	+.01	+.05	+.02	
HS 1-3 v. C 4+	+.17	-.47	+.01	+.01	+.16	-.48	
HS 4 v. C 1-3	.00	.00	.00	.00	.00	.00	
HS 4 v. C 4+	+.08	-.58	.00	.00	+.08	-.58	
C 1-3 v. C 4+	+.03	-.47	.00	.00	+.03	-.47	

continued...

Table 8. Indices of segregation among education groups for blacks and whites in Houston, 1960 and 1980.

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1960						
0-4 v. 5-7	.03	.06	.02	.00	.01	.06
0-4 v. 8	.05	.13	.02	.01	.03	.12
0-4 v. HS 1-3	.08	.19	.04	.00	.04	.19
0-4 v. HS 4	.12	.24	.04	.00	.08	.24
0-4 v. C 1-3	.16	.39	.04	.01	.12	.38
0-4 v. C 4+	.26	.50	.02	.01	.24	.49
5-7 v. 8	.01	.03	.00	.01	.01	.02
5-7 v. HS 1-3	.03	.07	.01	.01	.02	.06
5-7 v. HS 4	.06	.16	.01	.01	.05	.15
5-7 v. C 1-3	.10	.30	.01	.01	.09	.29
5-7 v. C 4+	.20	.42	.00	.01	.20	.41
8 v. HS 1-3	.02	.02	.01	.00	.01	.02
8 v. HS 4	.04	.08	.00	.00	.04	.08
8 v. C 1-3	.08	.21	.00	.00	.08	.21
8 v. C 4+	.19	.34	.00	.00	.19	.34
HS 1-3 v. HS 4	.02	.05	.00	.00	.02	.05
HS 1-3 v. C 1-3	.06	.16	.01	.00	.05	.16
HS 1-3 v. C 4+	.15	.30	.00	.01	.15	.29
HS 4 v. C 1-3	.03	.04	.00	.00	.03	.04
HS 4 v. C 4+	.12	.13	.00	.00	.12	.13
C 1-3 v. C 4+	.07	.05	.00	.00	.07	.05

continued...

Table 8. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1980						
0-4 v. 5-7	.05	.06	.00	.00	.05	.06
0-4 v. 8	.08	.14	.01	.01	.07	.13
0-4 v. HS 1-3	.07	.14	.01	.01	.06	.13
0-4 v. HS 4	.11	.18	.01	.01	.10	.17
0-4 v. C 1-3	.25	.29	.00	.00	.25	.29
0-4 v. C 4+	.41	.39	.01	.00	.40	.39
5-7 v. 8	.04	.06	.00	.01	.04	.05
5-7 v. HS 1-3	.05	.08	.01	.00	.04	.08
5-7 v. HS 4	.10	.15	.01	.01	.09	.14
5-7 v. C 1-3	.25	.26	.00	.00	.25	.26
5-7 v. C 4+	.42	.40	.02	.00	.40	.40
8 v. HS 1-3	.04	.03	.00	.00	.04	.03
8 v. HS 4	.07	.06	.01	.00	.06	.06
8 v. C 1-3	.18	.17	.00	.00	.18	.17
8 v. C 4+	.34	.30	.02	.00	.32	.30
HS 1-3 v. HS 4	.06	.05	.00	.00	.06	.05
HS 1-3 v. C 1-3	.18	.16	.00	.01	.18	.15
HS 1-3 v. C 4+	.37	.32	.05	.01	.32	.31
HS 4 v. C 1-3	.08	.04	.01	.00	.07	.04
HS 4 v. C 4+	.28	.18	.06	.02	.22	.16
C 1-3 v. C 4+	.19	.07	.03	.01	.16	.06

continued...

Table 8. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation		
	black	white	black	white	black	white	
Change 1960 to 1980							
0-4 v. 5-7	+ .02	.00	- .02	.00	+ .04	.00	
0-4 v. 8	+ .03	+ .01	- .01	.00	+ .04	+ .01	
0-4 v. HS 1-3	- .01	- .05	- .03	- .01	+ .02	- .06	
0-4 v. HS 4	- .01	- .06	- .03	+ .01	+ .02	- .07	
0-4 v. C 1-3	+ .09	- .10	- .04	- .01	+ .13	- .09	
0-4 v. C 4+	+ .15	- .11	- .01	- .01	+ .16	- .10	
5-7 v. 8	+ .03	+ .03	.00	.00	+ .03	+ .03	
5-7 v. HS 1-3	+ .02	+ .01	.00	- .01	+ .02	+ .02	
5-7 v. HS 4	+ .04	- .01	.00	.00	+ .04	- .01	
5-7 v. C 1-3	+ .15	- .04	- .01	- .01	+ .16	- .03	
5-7 v. C 4+	+ .22	- .02	+ .02	- .01	+ .20	- .01	
8 v. HS 1-3	+ .02	+ .01	- .01	.00	+ .03	+ .01	
8 v. HS 4	+ .03	- .02	+ .01	.00	+ .02	- .02	
8 v. C 1-3	+ .10	- .04	.00	.00	+ .10	- .04	
8 v. C 4+	+ .15	- .04	+ .02	.00	+ .13	- .04	
HS 1-3 v. HS 4	+ .04	.00	.00	.00	+ .04	.00	
HS 1-3 v. C 1-3	+ .12	.00	- .01	+ .01	+ .13	- .01	
HS 1-3 v. C 4+	+ .22	+ .02	+ .05	.00	+ .17	+ .02	
HS 4 v. C 1-3	+ .05	.00	+ .01	.00	+ .04	.00	
HS 4 v. C 4+	+ .16	+ .05	+ .06	+ .02	+ .10	+ .03	
C 1-3 v. C 4+	+ .12	+ .02	+ .03	+ .01	+ .09	+ .01	

Table 9. Indices of segregation among education groups for blacks and whites in Philadelphia, 1960 and 1980.

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1960						
0-4 v. 5-7	.03	.08	.00	.01	.03	.07
0-4 v. 8	.06	.10	.00	.00	.06	.10
0-4 v. HS 1-3	.08	.12	.00	.01	.08	.11
0-4 v. HS 4	.16	.21	.00	.01	.16	.20
0-4 v. C 1-3	.23	.30	.01	.00	.22	.30
0-4 v. C 4+	.29	.41	.01	.01	.28	.40
5-7 v. 8	.02	.03	.00	.00	.02	.03
5-7 v. HS 1-3	.03	.22	.00	.00	.03	.22
5-7 v. HS 4	.10	.25	.00	.01	.10	.24
5-7 v. C 1-3	.14	.25	.00	.03	.14	.22
5-7 v. C 4+	.20	.49	.00	.01	.20	.48
8 v. HS 1-3	.02	.03	.00	.00	.02	.03
8 v. HS 4	.06	.21	.00	.01	.06	.20
8 v. C 1-3	.12	.16	.01	.02	.11	.14
8 v. C 4+	.17	.44	.00	.02	.17	.42
HS 1-3 v. HS 4	.04	.02	.00	.00	.04	.02
HS 1-3 v. C 1-3	.07	.23	.00	.00	.07	.23
HS 1-3 v. C 4+	.13	.19	.00	.00	.13	.19
HS 4 v. C 1-3	.05	.04	.00	.00	.05	.04
HS 4 v. C 4+	.11	.10	.01	.00	.10	.10
C 1-3 v. C 4+	.09	.04	.00	.00	.09	.04

continued...

Table 9. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation	
	black	white	black	white	black	white
1980						
0-4 v. 5-7	.06	.09	.00	.01	.06	.08
0-4 v. 8	.11	.10	.02	.00	.09	.10
0-4 v. HS 1-3	.07	.08	.00	.00	.07	.08
0-4 v. HS 4	.11	.11	.01	.01	.10	.10
0-4 v. C 1-3	.24	.30	.03	.04	.21	.26
0-4 v. C 4+	.43	.29	.08	.02	.35	.27
5-7 v. 8	.07	.04	.01	.00	.06	.04
5-7 v. HS 1-3	.04	.05	.00	.01	.04	.04
5-7 v. HS 4	.09	.17	.00	.04	.09	.13
5-7 v. C 1-3	.21	.27	.03	.00	.18	.27
5-7 v. C 4+	.40	.28	.08	.00	.32	.28
8 v. HS 1-3	.05	.03	.01	.00	.04	.03
8 v. HS 4	.05	.18	.00	.06	.05	.12
8 v. C 1-3	.15	.20	.00	.00	.15	.20
8 v. C 4+	.30	.25	.03	.01	.27	.24
HS 1-3 v. HS 4	.07	.03	.02	.00	.05	.03
HS 1-3 v. C 1-3	.13	.13	.02	.01	.11	.12
HS 1-3 v. C 4+	.32	.17	.07	.00	.25	.17
HS 4 v. C 1-3	.04	.06	.00	.04	.04	.02
HS 4 v. C 4+	.16	.06	.01	.02	.15	.04
C 1-3 v. C 4+	.13	.05	.01	.00	.12	.05

continued...

Table 9. (continued)

Education Levels	(1) total metropolitan segregation		(2) intra-metropolitan segregation		(3) neighborhood segregation		
	black	white	black	white	black	white	
Change 1960 to 1980							
0-4 v. 5-7	+.03	+.01	.00	.00	+.03	+.01	
0-4 v. 8	+.05	-.01	+.02	.00	+.03	.00	
0-4 v. HS 1-3	-.01	-.04	.00	-.01	-.01	-.03	
0-4 v. HS 4	-.05	-.10	+.01	-.00	-.06	-.10	
0-4 v. C 1-3	+.01	-.00	+.02	+.04	-.01	-.04	
0-4 v. C 4+	+.15	-.12	+.08	+.01	+.07	-.13	
5-7 v. 8	+.05	+.01	+.01	.00	+.04	+.01	
5-7 v. HS 1-3	+.01	-.17	.00	+.01	+.01	-.18	
5-7 v. HS 4	-.01	-.08	.00	+.03	-.01	-.11	
5-7 v. C 1-3	+.07	+.02	+.03	-.03	+.04	+.05	
5-7 v. C 4+	+.20	-.21	+.08	-.01	+.12	-.20	
8 v. HS 1-3	+.03	.00	+.01	.00	+.02	.00	
8 v. HS 4	-.01	-.03	.00	+.05	-.01	-.08	
8 v. C 1-3	+.03	+.04	-.01	-.02	+.04	+.06	
8 v. C 4+	+.13	-.19	+.03	-.01	+.10	-.18	
HS 1-3 v. HS 4	+.03	+.01	+.02	.00	+.01	+.01	
HS 1-3 v. C 1-3	+.06	-.10	+.02	+.01	+.04	-.11	
HS 1-3 v. C 4+	+.19	-.02	+.07	.00	+.12	-.02	
HS 4 v. C 1-3	-.01	+.02	.00	+.04	-.01	-.02	
HS 4 v. C 4+	+.05	-.04	.00	+.02	+.05	-.06	
C 1-3 v. C 4+	+.04	+.01	+.01	.00	+.03	+.01	

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